Multi-Media Compliance Evaluation Inspection
USEPA Region III
Office of Enforcement, Compliance, and Environmental Justice

National Institutes of Health
Department of Health and Human Services
9000 Rockville Pike
Bethesda, MD 20892

Inspection Dates: July 13, 2009 to July 17, 2009, and July 30, 2009

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Background 4
Facility Description 5
Opening Conference 5
Technical Reports 6
Resource Conservation and Recovery Act - Hazardous Waste 6
Process Description 6
Permit Status 6
Inspection Observations 6
Records Review 15
Resource Conservation and Recovery Act – Underground Storage Tanks (USTs) 18
Inspection Observations 18
Financial Responsibility 27
Clean Air Act 27
Current applicability and permit status 27
Previous compliance inspections and enforcement actions 27
Documents reviewed and related observations 28
Facilities inspected and related observations 30
Clean Water Act 31
Current applicability and permit status 31
Previous compliance inspections and enforcement actions 32
Documents reviewed and related observations 32
Facilities inspected and related observations 33
Toxic Substance Control Act 36
Records Review 36
Spill Prevention Control and Countermeasure Plan 37
Records Review 37
Inspection Observations 38
Emergency Planning and Community Right to Know Act 38
Background 39
Inspection Observations 39
Environmental Management System 40
Records Review 41

Background

A multi-media inspection of National Institutes of Health (NIH or the Facility) was conducted on July 13, 2009 through July 17, 2009, by the Environmental Protection Agency (EPA) Region III's Federal Facility Program housed in the Office of Enforcement, Compliance and Environmental Justice (OECEJ). This office conducts a number of multi-media compliance inspections each year at Federal Facilities located in Region III.

This multi-media inspection is based on a national initiation focused on federal facility laboratories along with facilities having an impact on the Chesapeake Bay watershed. These focused areas along with issues or concerns dealing with past compliance history and environmental risk factors provide the makeup of the targeting process.

The objective of this multi-media inspection was to get a snap shot of the facilities overall compliance with regard to current environmental regulations. The scope of the inspection included compliance with:

- Clean Water Act (CWA). This aspect of the inspection focused on NPDES permit along with wastewater pretreatment, and construction sites.

- Clean Air Act (CAA). This inspection focused on the pollution control measures in place at the Facility, along with their Title V permit.

- Resource Conservation and Recovery Act (RCRA). This aspect of the inspection focused on the hazardous waste and underground storage tanks management (RCRA-C and RCRA-I).

- Spill Prevention and Control Countermeasures (SPCC). This part of the inspection looked at the facilities plan with regards to above and below ground equipment housing oil.

- Emergency Planning and Community Right to Know Act (EPCRA 313). This aspect of the inspection focused on the reporting of chemical inventory.

- Toxics Substance Control Act (TSCA). This part of the inspection focused on the lead-based paint in housing.

- Environmental Management Systems (EMS). The basic idea of EMS is to manage and minimize the impacts to the environment that result from operations at the Facility.

As part of the inspection, the inspectors also reviewed the records associated with each program.

Subsequent to the inspection, the Facility issued a letter to the inspector outlining areas or concern based on the out brief. General attachment #1 shows the area of concern along with the action the Facility took to resolve these concerns.

Facility Description

NIH is part of Department of Health and Human Services (DHHS). NIH is the primary federal agency that helps and supports the nation's medical research. With a combination of a research hospital, clinics, animal research, and thousands of laboratories, the Facility is known for their medical research. The Facility is located at 9000 Rockville Pike in Bethesda, Maryland. Comprised of 27 institutes and centers, the Facility spans 300 acres with 60 buildings and 18,000 employees. NIH houses a cogeneration plant which is under the control of PEPCO Energy Company.

The Facility has a Title V air permit along with an individual NPDES permit, and is operating as a Treatment Storage and Disposal Facility (TSDF) for hazardous waste. The Facility also has twenty (20) registered underground storage tanks (USTs) currently in use, of which 16 are subject to Subtitle I of the Resource Conservation and Recovery Act (RCRA).

The Facility has a Department of Environmental Protection (DEP), which is divided in three branches: the environmental compliance branch, environmental quality branch, and a waste and resource recovery branch. The DEP division is under the direction of the Office of Research Facilities.

Opening Conference

EPA inspectors Justin Young and José Jiménez along with contractor Michael Prescott arrived at the Facility on July 13, 2009, and met with facilities representatives. At 11:00 a.m. the EPA inspectors conducted an opening conference with director of the Office of Research facilities, Mr. Dan Wheeland, the director of Environmental Protection for the Facility, William (Kenny) Floyd, along with representatives from other programs throughout the Facility. At this time, the EPA inspectors presented their credentials to Mr. Dan Wheeland as authorized representatives of the agency. The EPA inspectors provided an overview of the inspection to the facility personnel, including aspects of why the Facility was selected for inspection. The EPA inspectors also let the Facility know that a close out conference would be conducted at the end of the inspection, to discuss any findings and or concerns found during the inspection.

Technical Reports

Resource Conservation and Recovery Act - Hazardous Waste

Background

The following observations are from the RCRA-C hazardous waste inspection of NIH conducted by Justin Young, EPA inspector.

The EPA inspector arrived at the Facility on July 13, 2009. Mr. Young presented his credentials to chemical waste team leader Charlyn Lee as an authorized representative of the Agency.

Process Description

The hierarchy of the hazardous waste management program has five (5) NIH government employees that oversee a staff of approximately 22 contractors. The primary contracting company is Clean Venture, who handles only the hazardous waste portion of the program. Clean Venture has a subcontractor Clym, who handles the combination of radioactive and hazardous waste (mixed waste) aspect of the program. The contractors handle the day to day operations for the Facility. The contractors go out to the points of generation, throughout the entire Facility, to collect the waste on a daily basis and bring this waste back to building 21 for sorting and processing. There is a 24-hour call center for the facilities labs, clinics, and hospital to call and schedule a waste pickup. All of the paperwork associated with the waste is handled by the contractor. The manifests are reviewed by Facility personnel before a shipment is sent off site.

Permit Status

The Facility notified as a Large Quantity Generator (LQG) and Treatment, Storage and Disposal Facility (TSDF).

Inspection Observations

Building 21

EPA inspector Justin Young, along with the Chief of Waste and Resource Recovery branch, Don Wilson, and chemical waste team leader Charlyn Lee, visited building 21. Once at building 21, Mr. Young was introduced to Assistant Project Manager for Clean Venture, John Fetterman, and Craig Upsin, Reactive Specialist for Clean Venture. Building 21 is used to sort, process, and store the hazardous waste that is brought in from the entire Facility. All the waste comes into a loading dock, which is the staging area for the waste (RCRA-C photo #1). Once the waste is brought into the building, it gets invoiced into an electronic tracking system along with an accumulation start date (RCRA-C photo #2). Each container coming into the building has a green tag with a hazardous waste label and barcode associated with that waste (RCRA-C photo #3). Each day the Facility prints out a service report to show what area, within the Facility, needs a pick up or delivery (RCRA-C attachment #1). At this point, the contractors sort and process the waste for treatment, bulking, or lab packing. RCRA-C Photo's #4, #5, and #6 show the waste consolidated into compatibility before being lab packed. The whole process from receiving to processing and on to the permitted storage area takes a couple of days according to Facility personnel. As long as the Facility keeps the original start accumulation date on the incoming containers, this process is acceptable.

Within building 21, the Facility has a permit for the treatment of hazardous waste. In room 1N135, the Facility conducts bulk containerizing of compatible waste. The Facility brings the waste from the initial receiving area and stages the glass waste containers for bulking within the room (RCRA-C photos #7 and #8). At this point, the Facility has a hooded area with sliding doors where the consolidation takes place in 55-gallon drums (RCRA-C photo #9). Once the Facility is finished filling a drum they put a new start accumulation date on the drum and transfer it to the appropriate permitted storage bay. These hazardous waste glass containers were being consolidated into 55-gallon drums and have a start accumulation date older than the date being inserted on the 55-gallon drum, inaccurately tracking the start accumulation date of the hazardous waste containers within the newly consolidated drum. Once the containers are emptied they are put in bins waiting to be crushed in a glass crusher (RCRA-C photo #10). There is a 30-gallon hazardous waste drum located under the glass crusher that collects the crushed glass containers, which has a hazardous waste label and a start accumulation date (RCRA-C photo #11). Beside the glass crushing machine, there is a 55-gallon drum of waste mercury bulbs that was closed and labeled hazardous waste with a date of 5/12/09 (RCRA-C photo #12). The crushed waste mercury bulbs drum has all the green label tags associated with what are being consolidated sitting on top of the drum. Along with the mercury, crushed glass, and other bulked drums there was a 55-gallon drum of silver salts that was being bulked, the drum was closed and labeled hazardous waste with a date of 7/6/09 (RCRA-C photo #13).

Room 1N131 is where the Facility does their neutralization of waste. This area is called the Pilot treatment room. They treat corrosive liquids and organic acids such as HCL. The waste that can be neutralized comes into this room from the initial receiving area and is stored in cabinets (RCRA-C photos #14 and #15). At the time of the inspection, there was no waste being stored in these cabinets for neutralization. According to Facility personnel, they use a batch process that can hold approximately 30 gallons at a time. There are four (4) separate treatment tanks within the room, but the Facility stated they have only used the "B" treatment tank (RCRA-C photo #16). This process is run about once a week and the Facility processed about 10 gallons on the morning of 7/15/2009. Once the waste is neutralized, the Facility records the pH in a log book, located in the room, and then releases the treated liquid into a drain bound for the POTW (WSSC) (RCRA-C photo #17).

Room 1N126 is called the special waste room. According to the permit, this room stores waste that is a flammable solid, water reactive, air reactive, and/or an inhalation hazard. The Facility put in new cabinets for storage in 2008. The new cabinets have a charcoal and HEPA filter attached, which according to Facility personnel have about a 3-year life span. There are a total of seven (7) cabinets in the room that store hazardous waste with the following:

- Cabinet #1: 2 containers with oldest start accumulation date of 6/23/09 (RCRA-C photo #18)

- Cabinet #2: 3 containers with oldest start accumulation date of 6/18/09 (RCRA-C photo #19)

- Cabinet #3: 3 containers with oldest start accumulation date of 6/22/09 (RCRA-C photo #20)

- Cabinet #4: 14 containers with oldest start accumulation date of 6/18/09 (RCRA-C photo #21)

- Cabinet #5: 5 containers with oldest start accumulation date of 7/9/09 (RCRA-C photo #22)

- Cabinet #6: 1 container with oldest start accumulation date of 7/9/09 (RCRA-C photo #23)

- Cabinet #7: 6 containers with oldest start accumulation date of 7/8/09 (RCRA-C photo #24)

All containers were closed, labeled and dated with hazard waste designations.

Room 1N139 is a lab associated with the testing of bulking and consolidation of drums. The lab is run by Harvey Neuman, Analytical Chemist. The tests conducted on the waste include pH, flashpoint, TOC, and mercury. According to Mr. Neuman, once the waste has been tested it gets poured back into the original container or drum. The EPA inspector was told there is no hazardous waste generated in the lab.

1N145 is the explosives room. As of July 1, 2009, there have not been any hazardous wastes stored in the room (RCRA-C attachment #2).

Room 1N105 is where the Facility does ultraviolet peroxidation. This is treatment for aqueous layers from building 26T. The Facility brings in the waste in a 55-gallon drum and pumps it into a storage tank (RCRA-C photo #25). At this point the Facility dilutes the waste with approximately 400 gallons of water to bring the TOC level below the 1.1% limit. From here the Facility pumps the waste, via hard piping, into the treatment unit (RCRA-C photo #26). According to statements made by Facility personnel, the treatment is a batch process that takes about 72 hours to complete. Once the treatment is completed the waste, which is now to be considered just radioactive is pumped into another storage tank (RCRA-C photo #27) before being discharged to the POTW (WSSC) within the limits imposed by Nuclear Regulatory Commission (NRC). The limit the Facility uses is 2.1 ppm Total Organic Carbon (TOC). At the time of inspection the Facility was storing approximately 300 gallons that was awaiting test results for TOC levels. The Facility stated this treatment process is listed under miscellaneous treatment unit per the permit and not a tank system.

The Facility has five (5) permitted storage bays located in building 21, which are detailed below:

- Storage Bay #1 (toxics) (RCRA-C photo #28):

  At the time of inspection, this bay was storing five 55-gallon hazardous waste drums, one 30-gallon hazardous waste drum, and one 3.5-gallon cardboard hazardous waste container (RCRA-C photos #29 and #30). The oldest start accumulation date on the waste was 7/7/09 (RCRA-C photo #31). The Facility was also storing 10 non hazardous waste drums in this bay.

- Storage Bay #2 (flammable liquids and toxic) (RCRA-C photo #32):

  This bay was storing seven 55-gallon hazardous waste drums at the time of inspection (RCRA-C photo #33). The oldest start accumulation date was 7/7/09 (RCRA-C photo #34).

- Storage Bay #3 (flammable liquid, acid, corrosive, toxic) (RCRA-C photo #35):

  The bay had a total of six (6) hazardous waste containers. There were two 55-gallon, three 30-gallon, and one 15-gallon (RCRA-C photo #36). The oldest start accumulation date in the bay was 6/19/09 (RCRA-C photo #37).

- Storage Bay #4 (flammable solid, alkaline, corrosive, toxic, flammable liquid) (RCRA-C photo #38):

  This bay was storing 2 hazardous waste containers. There was one 55-gallon dated 7/6/2009 (RCRA-C photo #39) and one 15-gallon dated 7/10/2009 (RCRA-C photo #40). This bay was also storing 16 universal waste containers with the oldest start accumulation date of 5/15/09 (RCRA-C photo #41).

- Storage Bay #5:

  At the time of inspection, the Facility was storing supplies and spill control equipment.

During the inspection of the storage bays, the inspector observed the hazardous and universal wastes containers were labeled, closed, and dated.

Pre Fabrication Metal Storage Bins

The Facility stated the only storage bins that were in use was shed #4, which housed universal waste batteries that had a start accumulation date of 6/22/09 (RCRA-C photo #42) and PCB's.

Building 26T

This building stores and processes the mixed waste generated throughout the Facility. The EPA inspector met with Wendy Rubin, who managed the facilities mixed waste. Wendy Rubin works under the Division of Radiation Safety. The Facility has an electronic database that tracks the radioactive containers. Once the radioactive material, within the containers, meets a certain standard the material gets transferred over to the hazardous storage contractors. The materials that have a longer half-life get sent to layer separation or they are bulked and shipped off-site. According to the Facility personnel, the half-life cut off for the radiation license at the Facility is 120 days. The EPA inspector observed storage bay A-1 through A-4 with the following:

- Storage Bay A-1 (radioactive, flammable, corrosive, and toxic) (RCRA-C photo #43):

No mixed waste being stored at time of inspection.

- Storage Bay A-2 (radioactive, flammable, corrosive, and toxic) (RCRA-C photo #44):

This bay is used for decay of radioactive material in storage.

- Storage Bay A-3 (radioactive, flammable, corrosive, and toxic) (RCRA-C photo #45):

This bay is used for the temporary storage pending final characterization.

- Storage Bay A-4 (RCRA-C photo #46):

This bay stores the longer half life material that gets transferred into layer separation or bulked for off-site shipment.

All of the wastes in the storage bays had labels and were closed.

Room 103 is an area where the Facility stores the mixed waste that is going for off-site disposal. One of the places the Facility stated the waste goes to is DSSI in Oak Ridge, TN. This area had a total of 12 containers. There were ten 55-gallon drums and two 30-gallon drums (RCRA-C photo #47). The oldest start accumulation date on the drums was 9/24/08.

In room 102 is where the Facility does their bulking and containerizing for the liquid scintillation vials used throughout the facilities labs. The Facility has a machine called the Vyleater (RCRA-C photo #48), which separates the scintillation glass and the radioactive (liquid) material. This Vyleater machine is used only with scintillation vials that have non RCRA regulated solvents. The scintillation vials that are directly bulked into 55-gallon drums contain both the RCRA hazardous waste solvents and radioactive waste (RCRA-C photos #49 and #50). At the time of inspection, the Facility had three 55-gallon hazardous waste scintillation drums. The oldest start accumulation date on the drums was 12/19/08 (RCRA-C photo #51).

Labs

The EPA inspector observed approximately 20 labs throughout the Facility. Accompanying the EPA inspector was Charlyn Lee, Debborah Gomke, Safety Manager and David Mohammadi, Industrial Chemist. The EPA inspector observed the following:

- Building 30 Lab Room 408

  The inspector talked with visiting fellow Ryan Petrie. The main function performed in this lab is the use of wet biochemistry and protein cell biology. This lab produces mainly alcohol waste, which comes from the left over buffers from running the lab equipment. The lab has a 20-liter waste container with a green tag indicating the contents along with a hazardous waste sticker and barcode (RCRA-C photo #52). The container was closed. The EPA inspector asked Mr. Petrie the process for disposing of the waste. Mr. Petrie said he calls a number to schedule a waste pick up. Mr. Petrie said the lab also produces a solid and liquid hazardous waste of Ethidium Bromide (EtBr) from electrophoresis processes. The lab has a central viewing area for the electrophoresis material. The waste is collected below the viewing area.

- Building 30 Lab Room 403

  The inspector talked with lab technician Kaz. The lab conducts research with DNA and wet biochemistry. The lab produces waste alcohol from buffer solution. The waste is stored in a 20-liter container with a green tag indicating the contents along with a hazardous waste label and barcode (RCRA-C photo #53). The container was closed.

- Building 30 Lab Room 420

  This is the common lab room where lab personnel use a machine (Alpha mager 3400) to view the DNA analysis with EtBr (RCRA-C photo #54). The waste is stored as a gel and separately as a liquid (RCRA-C photos #55 and #56). The containers were closed during the inspection. Charlyn Lee stated the waste is not a RCRA regulated hazardous waste. The waste containers have a green tag stating the contents along with a hazardous waste label and barcode. The EPA inspector questioned Charlyn Lee if the Facility was treating the waste as hazardous or not. Since she stated they are not but the containers clearly have the hazardous waste label included.

- Building 30 Lab Room 425

  This room produces mixed waste from the production of DNA protein gel. The lab has a bottle of mixed waste with a green tag indicating the contents. The lid was closed (RCRA-C photo #57).

- Building 30 Lab Room 432

  The EPA inspector met with Craig Rhodes a Biologist. This lab conducts research in DNA proteins, and tissue staining. There is a closed 20-liter container of hazardous waste xylene with a green tag indicating contents (RCRA-C photo #58). Mr. Rhodes stated this is waste generated from lab room 422. Facility personnel carry over the waste from lab room 422 (Centrifuge room) to this SAA container. To dispose of the waste the Facility personnel must exit lab 422 and walk into lab room 432. The inspector explained the concern with this process to Mr. Rhodes along with Charlyn Lee that transferring waste from one lab to another lab's SAA is not within the regulations of being at or near the point of generation and under control of the operator. Charlyn Lee called the waste contractors to come have the waste picked up since there is currently no waste being generated in this lab.

- Building 30 Lab Room 422

  This is called the Centrifuge room. Within the room there is a hood, which is storing hazardous waste. There is a bottle of xylene waste along with a mixture of different types of hazardous waste (RCRA-C photo #59). Waste xylene from this room was also stated by Mr. Rhodes to be carried over to lab room 432.

- Building 30 Lab Room 307

  This lab conducts research on tissue cultures and electrophoresis that produce hazardous wastes. The EPA inspector met with Monica, a lab technician. There is a liquid hazardous waste container and a black solid hazardous waste container that stores the waste EtBr gel (RCRA-C photo #60). The tissue culture waste is stored separately in a 5-gallon container (RCRA-C photo #61). All of the SAA containers were closed and labeled during the inspection.

- Building 30 Lab Room 326

Waste produced in this lab room is from electrophoresis and staining. The EPA inspector talked with Research Scientist, Nancy Francis. The waste is a combination of ethanol and xylene. There is a single container of waste with the green tag and hazardous waste label with barcode (RCRA-C photo #62). The container was closed at time of inspection.

- Building 49 Lab Room 3B24

  This lab room is used as a dark room. There is a machine that processes film with a jar attached to collect excess silver from going into the buildings drains (RCRA-C photo #63). The Facility stated the equipment is owned and maintained by S&W imaging. The EPA inspector talked with Dr. Fabio Candotti, who said the waste is recycled and picked up by S&W imaging maintenance contractors.

- Building 49 Lab Room 3A11

  The EPA inspector met with Chemist, Nancy Seidel. This lab conducts staining of DNA and uses extraction equipment. Flammable alcohol waste is produced (RCRA-C photo #64); along with a separate waste container that houses the waste from DNA processing (RCRA-C photo #65). Both containers stored are closed and labeled with contents.

- Building 49 Lab Room 3A71

  This lab housed a fume hood, which had two (2) containers of waste labeled 2% formaldehyde and 4% formaldehyde. There was a third container in-between the two waste containers that did not have any type of markings or label to denote the contents of the container (RCRA-C photo #66). Based on the photo the plastic container was approximately half a liter, with contents equaling about a quarter of the container. The inspectors asked if anyone from the lab or facilities knew the content of the container. The EPA inspector was unable to determine the content of the container. The inspector explained to the Facility representatives the need to be some type of markings or labels to denote the content. The waste containers were closed during the inspection.

- Building 49 Lab Room 3C76

  This lab conducts silver staining and 2D gels that produce hazardous waste. There are two 20-liter containers of waste with green tags that have a hazardous waste label and bar code (RCRA-C photo #67). The containers were closed.

- Building 49 Lab Room 2C08

The EPA inspector met with Lab Manager Vanessa Baxendale who explained this lab conducts RNA, DNA analysis along with immunohistamine chemistry. There is a fume hood that houses hazardous waste produced in the lab. RCRA-C Photo #68 shows the combination of waste produced. The front six (6) vials were stated not to be waste. Waste containers were closed.

- Building 49 Lab Room B1C28

  EPA inspector met with Walter Lerchner, Staff Scientist. The lab runs DNA synthesis. This lab has a 20-liter container of hazardous waste liquid and a 5 gallon bucket container with hazardous waste gel as the contents. Both containers were closed. Both containers also had a green tag with a hazardous waste sticker and barcode (RCRA-C photo #69).

- Building 10 Lab Room 10N108

  The lab manager for this lab is Iris Wise. The lab prepares eye tissue samples for doctors at the Facility so they can run analysis. According to Ms. Wise, the preparation of the tissues produces hazardous waste. Within the room there is a 5-gallon container with a green tag that states the contents and has a hazardous waste sticker and barcode (RCRA-C photo # 70). The container was closed.

- Building 10 Lab Room 10N208

  The EPA inspector met with Lab Manager Barbra Vistica. There is a hood within this lab room that houses an Erlenmeyer flask. The content of the flask was stated by Ms. Vistica to be a hazardous waste. There was no label or contents that could identify the flask as a hazardous waste (RCRA-C photo #71). The flask had a stopper with rubber tubing. The EPA inspector explained the concern about the flask to Barbra Vistica and the rest of the Facility representatives. Barbra stated this is how waste containers are dealt with throughout the Facility. Subsequent to the explanation, a Facility representative had the bottle labeled with the content (RCRA-C photo #72)

- Building 10 Lab Room 11N315

  The EPA inspector met with Debbie Glass, who explained this lab conducts DNA and RNA synthesis. To view the media, the lab has to walk over to room 11D19, at which point disposes of the waste in a 5-gallon bucket. The bucket had a green tag with a hazardous waste sticker and barcode (RCRA-C photo #73). This is the EtBr waste stream stated by Charlyn Lee not to be regulated. The container was closed.

- Building 10 Lab Room 11N250

The EPA inspector was greeted by post doctorate fellow Marlene Brandes. The lab conducts immunohistamine chemistry. According to Ms. Brandes, the waste produced is a mixture of alcohols and xylene that is managed as hazardous waste. The lab had a 5-gallon container with green tab with contents listed and a hazardous waste sticker with barcode (RCRA-C photo #74). The container was closed.

- Building 10 Lab Room 11C215

  EPA inspector met with Helene Rosenberg, a Senior Investigator. Helene stated this room was not producing hazardous waste at the time of the inspection.

- Building 10 Lab Room 9C214

  The EPA inspector was greeted by Thomas Gluick, the Lab Manger. Mr. Gluick stated this lab room conducts histochemical analysis. The lab was storing xylene waste in a hood with a label of the contents. The plastic container was closed (RCRA-C photo #75).

Universal Waste Generation

The Facility has a universal waste program in place. A call comes into maintenance department for a change of light bulbs. Once the maintenance changes out the bulb they either bring the waste to building 21 or call to have the waste contractors to pick up the waste for storage in building 21. The Facility stated there was no other collection point for universal waste at the Facility.

Records Review

The EPA inspector revisited the Facility on July 30, 2009, to review the Facility's records.

Manifests and LDR

The EPA inspector put together a random number generator based on an excel spreadsheet for dates between 7/12/2006 and 7/12/2009 to review the facilities manifest. This random number generator was based on the fact the Facility has shipped out waste on a weekly basis for at least the past three years. The review of the manifests did not raise any areas of concern. With each signed manifest the Facility had a certificate of disposal showing the method, place, and date of final disposal, along with a signed LDR for the corresponding manifest number and a breakdown of the container packing list (RCRA-C attachment #3).

Contingency Plan

The inspector reviewed the Facility's contingency plan. The effective date of the plan is 8/13/2008. The plan included information regarding the action to be taken in case of an emergency, arrangements made with local authorities, list of emergency equipment, evacuation plan. The plan also included a list of the emergency coordinators (EC) and contact information. There is a primary EC along with two secondary backups.

Permit/Operating Records

As part of the hazardous waste permit for the Facility they have to maintain an operating record. The permit states the Facility has to conduct inspections on a monthly basis for the bulking and blending done in the fume hoods, weekly inspections for the explosive waste containment area, building 26T, and building 21, and daily inspections for the UV peroxidation treatment system. The EPA inspector reviewed inspection records for the months of April and May 2009. RCRA-C attachment #4 shows a copy of these inspection sheets filled out and signed for the month of April 2009. The Facility was filling out and signing the inspection forms. One area of concern the EPA inspector brought up to the Facility was the daily inspections for the UV treatment. The permit states a daily inspection of the system, but the Facility was conducting inspections on a Monday through Friday work week schedule, not a 7 day a week schedule. Mr. Don Wilson of the Facility contacted the permit writer for MDE and posed the question about what was meant by daily inspection. Currently MDE is looking into the inquiry as to the intended requirements.

At the time of the inspection, the Facility was dating all the hazardous waste containers, with the accumulation start date, when the container is received at building 21. One of the stipulations for considering a material a waste is when it is to be discarded. Based on Facility guidance, the waste is discarded when a request for pick up has been placed with the chemical waste service contractors (RCRA-C attachment #5). The start accumulation date of the waste should be placed on the container when the call gets placed to the waste contractor.

During the records review, the EPA inspector asked about information regarding the UV peroxidation permit requirements. The Facility provided the EPA inspector with a permit renewal application dated November 2008, with updated requirements for the UV treatment process, along with a batch control record and operating log. The EPA inspector looked at the last three batch control records required by the permit (see RCRA-C attachment #6). The permit sets a range of operating temperature between 70-130 degrees Fahrenheit. On multiple occasions shown in the below table the Facility was outside those requirements.

Batch Number	Date	Temperature (Fahrenheit) Low-High limits 70-130
U11062	9/15/08	**68**-96
U11062	9/22/08	**67**-100
U11062	9/23/08	78-*
U11062	9/24/08	**68**-96
U11062	9/25/08	80-*
U11062	9/26/08	80-*
U11062	9/29/08	**62**-90
U11062	9/30/08	**68**-82
U11063	10/23/08	**62**-90
U11063	10/27/08	**68**-86
U11063	11/3/08	**68**-85
U11063	11/10/08	**68**-98
U11063	11/12/08	**68**-88
U11064	12/3/08	**60**-*
U11064	12/4/08	**68**-100
U11064	12/5/08	**68**-94
U11064	12/8/08	**68**-84
U11064	12/11/08	**68**-92
U11064	12/12/08	**68**-90
U11064	12/15/08	**68**-82

* No recorded temperature

This table shows information regarding the dates in which the Facility was operating the UV treatment process outside the allowed temperature range according to the permit.

Training

The Facility maintains a training folder on each employee and contractor that works in the hazardous waste department. The EPA inspector looked at the training folder for two employees that sign the hazardous waste manifests. The folder includes a written job title and description for the employee along with a list of needed and future training. Charlyn Lee stated that new Facility personnel come on board and get sent out to training classes such as McCoy's and other job related training along with working beside a senior member of the team. The Facility has an online database that shows the type, date, and frequency of training provided to the employees (RCRA-C attachment #7). Due to time constraints the EPA inspector did not review any lab personnel for hazardous waste training.

Biennial Report

The Facility had a copy of the 2007 biennial report EPA form 8700-13 A/B. The biennial report had information regarding the TSD and transporters EPA ID numbers along with the quantity and description of each waste generated and shipped off site.

Resource Conservation and Recovery Act – Underground Storage Tanks (USTs)

The following observations are from the RCRA-I underground storage tank inspection of NIH conducted by Mr. Wilbur Martínez and Mr. Gerard Crutchley.

Upon arrival at the Facility, credentials were presented to Mr. Daryl Moore, Environmental Protection Specialist representing NIH, and the scope and purpose of the inspection were explained. Mr. Moore was on-site to assist with the opening of sumps and covers. In addition, Mr. Jacob Matheson of Advance Equipment MSRI, the maintenance contractor in charge of Automated Tank Gauging equipment (ATGs) and inspections for all USTs at the Facility, was also present during the inspection.

Inspection Observations

Tank Descriptions

The State of Maryland Underground Storage Tank Facility Certificate of Registration for NIH (UST attachment #1) lists a total of thirty-one USTs, of which eleven have either been rendered permanently out of use or have been removed. Of the remaining twenty USTs that are currently in use; four store heating oil for consumptive use on the premises; three store diesel, ethanol E-85, and gasoline, respectively, for use as vehicle fuel; and thirteen store diesel solely for use as fuel for emergency power generators located throughout the Facility. The general location of these tanks is shown in UST attachment #2. Table UST-1 summarizes the tank and piping details for the sixteen USTs currently in use at the Facility that are subject to Subtitle I of the Resource Conservation and Recovery Act (RCRA). This information is based on the Facility's notification to the Maryland Department of the Environment, and on additional or updated information provided by the Facility during the course of the inspection. Due to time constraints, five of the USTs that store diesel solely for use as fuel for emergency power generators (UST-015, UST-018, UST-027, UST-029, and UST-030) were not inspected.

Table UST-1: Underground Storage Tank and Piping Details

Tank No.	NIH Building No.	Substance Stored	Capacity (gallons)	Installation Date	Tank Construction Material	Piping Construction Material	Corrosion Protection	Spill Catch Basin Provided?
006	NIH 12	Bio-Diesel	10,000	1995	FRP Clad Steel (DW) [a]	FRP	Inherent	Yes
007	NIH 12	Ethanol E-85	10,000	1995	FRP Clad Steel (DW) [a]	FRP	Inherent	Yes
008	NIH 12	Gasoline	10,000	1995	FRP Clad Steel (DW) [a]	FRP	Inherent	Yes
011	NIH 5	Diesel	1,000	1995	STI-P3 (SW)	Copper	Sacrificial Anode CP (includes piping)	Yes
012	NIH 6A	Diesel	1,000	1993	FRP Clad Steel (DW) [a]	FRP	Inherent	Yes
013	NIH 7	Diesel	1,000	1993	FRP Clad Steel (DW) [a]	FRP	Inherent	Yes
015	NIH 10B	Diesel	2,000	1995	FRP Clad Steel (DW) [a]	FRP	Inherent	Yes
017	NIH 29B	Diesel	4,000	1993	STI-P3 [b] (DW)	Steel	Sacrificial Anode CP (includes piping)	Yes
018	NIH 21	Diesel	550	1993	FRP Clad Steel (DW) [a]	FRP	Inherent	Yes
020	NIH 52	Diesel	1,000	1993	FRP Clad Steel (DW) [a]	FRP	Inherent	Yes
021	NIH 29A	Diesel	550	1995	FRP Clad Steel (DW) [a]	FRP	Inherent	Yes
024	NIH 6B	Diesel	4,000	1987	Composite Steel with Fiberglass [c]	FRP	Inherent	Yes
027	NIH 31A	Diesel	600	2001	FRP (XERXES) (DW)	FRP	Inherent	Yes
029	NIH 40	Diesel	10,000	1999-2000	FRP (XERXES) (DW)	FRP	Inherent	Yes
030	NIH 49	Diesel	5,000	TBD	FRP Clad Steel (DW) [a]	Steel	Sacrificial Anode CP (piping only)	Yes
031	NIH 14E	Diesel	550	TBD	STI-P3 (DW)	Copper	Sacrificial Anode CP (tank only)	Yes

DW – Double Walled
SW – Single Walled
[a] The Notification for Underground Storage Tanks describes the tank construction material as Fiberglass Reinforced Plastic (FRP); however, Facility personnel indicated that this was incorrect.
[b] The Notification for Underground Storage Tanks describes the tank construction material as steel with fiberglass; however, other information provided indicated that it is STI-P3.
[c] The Notification for Underground Storage Tanks does not indicate whether this tank is single walled or double walled.

Tank Release Detection

Pursuant to 40 CFR 280.10(d), release detection requirements do not apply to UST systems that store fuel solely for use by emergency power generators. Therefore, of the sixteen USTs currently in use at the Facility that are subject to RCRA- Subtitle I, only the three USTs located in Building NIH-12 (UST-006, UST-007, and UST-008) are required to have a method for release detection (UST photos #4, #3, and #2, respectively).

According to the information provided by the Facility, twelve of the thirteen USTs used to store fuel solely for use by emergency power generators are provided with Automatic Tank Gauge (ATG) systems set up for detection of releases, and one UST (UST-011) is provided with two monitoring wells. Table UST-2 lists the release detection monitoring equipment information provided by the Facility for each UST, as well as additional release monitoring equipment observed during the inspection.

Table UST-2: UST Release Detection Monitoring Equipment

Tank No.	NIH Building No.	Substance Stored	Capacity (gal.)	Tank Storage Purpose	Tank Release Detection Monitoring Equipment	Field Verified?	Reference Photos
006	NIH 12	Bio-Diesel	10,000	Vehicle Fuel	ATG (Veeder-Root TLS-350), Interstitial Probe, and 2 Monitoring Wells	Yes	UST-9, UST-10, and UST-14
007	NIH 12	Ethanol E-85	10,000	Vehicle Fuel	ATG (Veeder-Root TLS-350), Interstitial Probe, and 2 Monitoring Wells	Yes	UST-7, UST-8, and UST-14
008	NIH 12	Gasoline	10,000	Vehicle Fuel	ATG (Veeder-Root TLS-350), Interstitial Probe, and 2 Monitoring Wells	Yes	UST-5, UST-6, and UST-14
011	NIH 5	Diesel	1,000	Emergency Generator Fuel	2 Monitoring Wells	Yes	N/A
012	NIH 6A	Diesel	1,000	Emergency Generator Fuel	ATG (Veeder-Root TLS-300 C), Interstitial Probe, and 2 Monitoring Wells	Yes	UST-37, UST-38, and UST-39
013	NIH 7	Diesel	1,000	Emergency Generator Fuel	ATG (Veeder-Root TLS-300 C), Interstitial Probe, and 2 Monitoring Wells	Yes	UST-34 and UST-35
015	NIH 10B	Diesel	2,000	Emergency Generator Fuel	ATG (Veeder-Root TLS-300 C)	No	N/A
017	NIH 29B	Diesel	4,000	Emergency Generator Fuel	ATG (Veeder-Root TLS-300 C), Interstitial Probe, and 2 Monitoring Wells	Yes	UST-20 and UST-22
018	NIH 21	Diesel	550	Emergency Generator Fuel	ATG (Veeder-Root TLS-300 C)	No	N/A

020	NIH 52	Diesel	1,000	Emergency Generator Fuel	ATG (Veeder-Root TLS-300 C), Interstitial Probe, and 2 Monitoring Wells	Yes	UST-28 and UST-30
021	NIH 29A	Diesel	550	Emergency Generator Fuel	ATG (Veeder-Root TLS-300 C) and 2 Monitoring Wells	Yes	UST-23
024	NIH 6B	Diesel	4,000	Emergency Generator Fuel	ATG (Veeder-Root TLS-300 C) and 2 Monitoring Wells	Yes	N/A
027	NIH 31A	Diesel	600	Emergency Generator Fuel	ATG (Veeder-Root TLS-300 C)	No	N/A
029	NIH 40	Diesel	10,000	Emergency Generator Fuel	INCON Tank Sentinel TS-1001	No	N/A
030	NIH 49	Diesel	5,000	Emergency Generator Fuel	ATG (Veeder-Root TLS-300 C)	No	N/A
031	NIH 14E	Diesel	550	Emergency Generator Fuel	ATG (Veeder-Root TLS-300 C) and Interstitial Probe and 2 Monitoring Wells	Yes	UST-25 and UST-26

The primary leak detection for UST-006, UST-007, and UST-008 is provided by a Veeder-Root TLS-350 ATG monitoring system (UST photo #14) that performs continuous statistical leak detection (CSLD). The ATG manual was found at the station at the time of the inspection. The ATG probe connections are shown in UST photos #6, #8, and #10 for the gasoline, E-85, and bio-diesel USTs, respectively. The Facility was able to provide release detection testing results for the months of March through July 2009, showing a "pass" results for all the tanks. The facility could not provide any other release detection test results relating to the prior eight months. The ATG was operational at the time of the inspection and displayed the message "all functions normal" (UST photo #15). The three tanks were also equipped with interstitial monitoring probes (UST photos #5, #7, and #9, for the gasoline, E-85, and bio-diesel USTs, respectively). The interstitial monitoring probes are connected to the ATG system and provide a secondary means for leak detection. However, although the interstitial monitoring system was operational at the time of the inspection, no documentation of monthly readings was kept by the Facility. Documents reviewed by the EPA inspector shows the Facility performs daily inspections to verify the operations of the ATG. Each tank is also provided with two monitoring wells, each of which is approximately fourteen and a half (14 ½) feet in depth. The wells were opened and tested with an interface probe during the inspection. Five wells were found to be dry and one contained water at about twelve and a half (12 ½) feet in depth from the top of the casing. No evidence of fuel was observed.

Piping Release Detection

The USTs at the Facility's refueling station (UST-006, UST-007, and UST-008) are equipped with suction piping that, according to the Facility personnel, is designed and constructed to meet the requirements of a "safe suction system." Therefore, pursuant to 40 CFR 280.41(b)(2), no release detection system is required. The remaining USTs currently in use at the Facility, that are subject to RCRA Subtitle I, store diesel solely for use as fuel for emergency power generators and, pursuant to 40 CFR 280.10(d), piping release detection requirements do not apply to these UST systems.

With the exception of UST-011, UST-015, UST-017, UST-024, UST 027, UST-029, and UST-030, all of the piping systems for the other USTs, that store fuel solely for use by emergency power generators are, according to information provided by the Facility, designed and constructed to meet the requirements of "safe suction systems" that, pursuant to 40 CFR 280.41(b)(2), would not require release detection.

Information provided by the Facility describes UST-011 as a "gravity-feed system." No obvious piping release detection equipment was noted on this UST system during the inspection. UST-017 is equipped with a submersible turbine pump and the piping system is pressurized. The piping for UST-017 is equipped with a mechanical line leak detector (see Photo UST-19). Information provided by the Facility describes UST-015 and UST-027 as "U.S. Suction systems;" however, these USTs were not observed during the inspection and no additional information is available on whether these tanks are provided with any mechanism for detecting piping releases. No information is available on the type of piping or piping release detection for UST-029 and UST-030, and these USTs were not observed during the inspection. Table UST-3 lists the piping release detection monitoring equipment information provided by the Facility for each UST and/or observed during the inspection, along with other inspection observations.

Table UST-3: Piping Release Detection Monitoring Equipment

Tank No.	NIH Building No.	Substance Stored	Capacity (gal.)	Tank Storage Purpose	Piping Type (Based on Notification Form)	Inspection Observations	Reference Photos
006	NIH 12	Bio-Diesel	10,000	Vehicle Refueling	Pressure, Gravity Feed, and Safe Suction	According to the Facility personnel, the piping is designed and constructed to meet the requirements of a safe suction system. Specifications could not be verified on the field. No obvious piping release detection equipment noted.	UST-11
007	NIH 12	Ethanol E-85	10,000	Vehicle Refueling	Pressure, Gravity Feed, and Safe Suction	According to the Facility personnel, the piping is designed and constructed to meet the requirements of a safe suction system. Specifications could not be verified on the field. No obvious piping release detection equipment noted.	UST-12
008	NIH 12	Gasoline	10,000	Vehicle Refueling	Pressure, Gravity Feed, and Safe Suction	According to the Facility personnel, the piping is designed and constructed to meet the requirements of a safe suction system. Specifications could not be verified on the field. No obvious piping release detection equipment noted.	UST-13
011	NIH 5	Diesel	1,000	Emergency Generator	Gravity Feed	Piping release detection requirements do not apply to this UST system. Piping type could not be verified on the field. No obvious piping release detection equipment noted.	N/A
012	NIH 6A	Diesel	1,000	Emergency Generator	Safe Suction	Piping release detection requirements do not apply to this UST system. Specifications of "safe suction system" could not be verified on the field. No obvious piping release detection equipment noted.	UST-37

013	NIH 7	Diesel	1,000	Emergency Generator	Safe Suction	Piping release detection requirements do not apply to this UST system. Specifications of "safe suction system" could not be verified on the field. No obvious piping release detection equipment noted.	UST-34
015	NIH 10B	Diesel	2,000	Emergency Generator	U. S. Suction	Tank System was not inspected.	N/A
017	NIH 29B	Diesel	4,000	Emergency Generator	Safe Suction	Piping release detection requirements do not apply to this UST system. The piping type actually consists of pressure piping. Piping system is equipped with a mechanical line leak detector.	UST-19
018	NIH 21	Diesel	550	Emergency Generator	Safe Suction	Tank System was not inspected.	N/A
020	NIH 52	Diesel	1,000	Emergency Generator	Safe Suction	Piping release detection requirements do not apply to this UST system. Specifications of "safe suction system" could not be verified on the field. No obvious piping release detection equipment noted.	UST-28
021	NIH 29A	Diesel	550	Emergency Generator	Safe Suction	Piping release detection requirements do not apply to this UST system. Specifications of "safe suction system" could not be verified on the field. No obvious piping release detection equipment noted.	UST-23
024	NIH 6B	Diesel	4,000	Emergency Generator	Not Provided	Piping release detection requirements do not apply to this UST system. According to the Facility personnel, the piping is designed and constructed to meet the requirements of a safe suction system. Specifications could not be verified on the field. No obvious piping release detection equipment noted.	N/A
027	NIH 31A	Diesel	600	Emergency Generator	U. S. Suction	Tank System was not inspected.	N/A
029	NIH 40	Diesel	10,000	Emergency Generator	Not Provided	Tank System was not inspected.	N/A
030	NIH 49	Diesel	5,000	Emergency Generator	Not Provided	Tank System was not inspected.	N/A
031	NIH 14E	Diesel	550	Emergency Generator	Safe Suction	Piping release detection requirements do not apply to this UST system. Specifications of "safe suction system" could not be verified on the field. No obvious piping release detection equipment noted.	UST-25

Spill/Overfill

According to information provided by the Facility, all tanks at NIH are equipped with spill buckets. The spill buckets are subjected to hydrostatic testing periodically. Table UST-4 lists the spill protection equipment and the date of the last hydrostatic testing, as provided by the Facility.

Table UST-4: Spill Response Equipment and Date of Last Hydrostatic Testing

Tank No.	NIH Building No.	Substance Stored	Capacity (gal.)	Spill Prevention Equipment	Field Verified?	Date of Last Hydrostatic Test	Results /Action Taken	Reference Photo
006	NIH 12	Bio-Diesel	10,000	Sump and Spill Bucket	Yes	TBD	N/A	UST-10

007	NIH 12	Ethanol e-85	10,000	Sump and Spill Bucket	Yes	TBD	N/A	UST-8
008	NIH 12	Gasoline	10,000	Sump and Spill Bucket	Yes	TBD	N/A	UST-6
011	NIH 5	Diesel	1,000	Spill Bucket	Yes	TBD	N/A	UST-31
012	NIH 6A	Diesel	1,000	Sump and Spill Bucket	Yes	May 2009	Passed	UST-37
013	NIH 7	Diesel	1,000	Sump and Spill Bucket	Yes	TBD	N/A	UST-34
015	NIH 10B	Diesel	2,000	Sump and Spill Bucket	No	Sep. 2008	Passed	N/A
017	NIH 29B	Diesel	4,000	Spill Bucket	Yes	Jun. 2007	Passed	UST-21
018	NIH 21	Diesel	550	Sump and Spill Bucket	No	Sump tested Jan. 2007 and spill bucket tested Jan. 2009	Sump Passed and Spill Bucket Replaced	N/A
020	NIH 52	Diesel	1,000	Sump and Spill Bucket	Yes	TBD	N/A	UST-28
021	NIH 29A	Diesel	550	Sump and Spill Bucket	Yes	Sump tested Jun. 2007 and Spill Bucket tested Sep. 2008	Passed	UST-23
024	NIH 6B	Diesel	4,000	Spill Bucket	Yes	Jun. 2007	Passed	UST-41
027	NIH 31A	Diesel	600	Sump and Spill Bucket	No	TBD	N/A	N/A
029	NIH 40	Diesel	10,000	Sump and Spill Bucket	No	Sump tested Sep. 2008 and Spill Bucket tested Jun. 2007	Passed	N/A
030	NIH 49	Diesel	5,000	Spill Bucket	No	June 2007	Passed	N/A
031	NIH 14E	Diesel	550	Sump and Spill Bucket	Yes	Jan. 2009	Sump and Spill Bucket Replaced	UST-25

In addition to the spill buckets, the three tanks located at the Facility's refueling station (UST-006, UST-007, and UST-008) are sited within a spill containment area (valves are used to release any accumulated rain water), which provides for additional spill containment. The spill containment area at the Facility's refueling station was clean at the time of the inspection, with no visible spills on the concrete. During the inspection, it was observed that the spill bucket for UST 006, contained liquid (UST photo #10).

The types of overfill prevention equipment provided for the USTs observed during the inspection are documented in Table UST-5. During the inspection, it was noted that the ATG fuel level alarm enunciator for UST 020 is not loud enough to be heard by the operator delivering fuel and no mechanical overfill protection device was evident inside the fill pipe (only fuel could be observed) even though the Facility indicates that one is installed. The ATG fuel level alarm enunciator for UST 024 was not loud enough either, but in this case, a flapper valve was observed in the fill pipe. Mr. Jacob Matheson, the maintenance contractor in charge of ATGs and inspections for all USTs at the Facility, also coordinates the refueling of the USTs. During the inspection, Mr. Matheson stated that, if the USTs need to be refueled, to prevent spills due to overfilling, the Facility orders specific amounts (volume) of fuel for each individual tank (based on the fill level of the UST), and never requests that the tanks be filled to capacity.

Table UST-5: Overfill Prevention Equipment Observed During Inspection

Tank No.	NIH Building No.	Substance Stored	Capacity (gal.)	Overfill Prevention Equipment	Field Verified?	Reference Photos
006	NIH 12	Bio-Diesel	10,000	Flapper Valve and ATG Overfill Alarm	Yes	UST-14 and UST-16
007	NIH 12	Ethanol e-85	10,000	Flapper Valve and ATG Overfill Alarm	Yes	UST-14 and UST-16
008	NIH 12	Gasoline	10,000	Flapper Valve and ATG Overfill Alarm	Yes	UST-14 and UST-16
011	NIH 5	Diesel	1,000	Flapper Valve	Yes	N/A
012	NIH 6A	Diesel	1,000	ATG Overfill Alarm	Yes	UST-37 and UST-39
013	NIH 7	Diesel	1,000	ATG Overfill Alarm	Yes	UST-34 and UST-35
017	NIH 29B	Diesel	4,000	Flapper Valve and ATG Overfill Alarm	Yes	N/A
020	NIH 52	Diesel	1,000	ATG Overfill Alarm [1]	Yes [2]	N/A
021	NIH 29A	Diesel	550	Flapper Valve and ATG Overfill Alarm	Yes	UST-24
024	NIH 6B	Diesel	4,000	Flapper Valve and ATG Overfill Alarm	Yes [2]	N/A
031	NIH 14E	Diesel	550	Flapper Valve and ATG Overfill Alarm	Yes	N/A

[1] The Facility asserts that a mechanical overfill protection device is installed in the fill pipe for this tank; however, during the inspection, no overfill protection device was evident inside the tube, only fuel could be observed. If such a device has indeed been installed, the fact that only fuel could be observed would be an indication that it is not working properly to prevent overfill.
[2] ATG fuel level alarm enunciator not loud enough to be heard by an operator delivering fuel.

Corrosion Protection

According to the information provided by the Facility (see Table UST-1), four USTs or their associated piping require corrosion protection in accordance with 40 CFR 280.20(a) and (b), because the tank or piping routinely contain regulated substances and are constructed of metal components that are in contact with the ground. These UST systems are UST-011, UST-017, UST-030 and UST-031.

For UST-011, the Facility provided corrosion protection testing documentation indicating that only the tank corrosion protection system was tested on August 4, 2008, and that it met the criteria for corrosion control (UST attachment #3). Maintenance documentation reviewed at the Facility indicated that a piping corrosion protection test was conducted and new anodes were installed in May 2008; however, no documentation on this piping corrosion protection test was provided. Also, the Facility was not aware of any testing of the cathodic protection system for UST-011 and its associated piping conducted prior to 2008.

The Facility provided corrosion protection testing documentation indicating that testing had been conducted on UST-017 and its associated piping on April 27, 2007 (UST attachment #4). The results of this testing indicated that neither the tank nor the lines met the criteria for corrosion control. Maintenance documentation reviewed at the Facility showed that new anodes were installed in September 2008, seventeen months after the testing. The Facility provided additional corrosion testing documentation on a subsequent test conducted on January 1, 2009, but only on the piping associated with UST-017 (UST attachment #5). The results of this testing indicated that the line met the criteria for corrosion control (i.e., corrective action measures had been taken with respect to the piping). The Facility, however, did not provide any documentation concerning subsequent corrosion protection testing conducted on the UST itself. Also, the Facility was not aware of any testing of the cathodic protection system for UST-017 and its associated piping conducted prior to 2007.

The Facility provided corrosion protection testing documentation indicating that, on August 4, 2008, testing had been conducted on the piping associated with UST-030, and that it met the criteria for corrosion control (UST attachment #6). According to maintenance records reviewed at the Facility, the corrosion protection system for the piping associated with UST-030 had been tested and new anodes installed in July 2008; however, no documentation on this piping corrosion protection test was provided. The Facility was not aware of any testing of the cathodic protection system for the piping associated with UST-030 conducted prior to 2008. The initial Notification for Underground Storage Tanks was submitted to the state of Maryland for UST-30 on October 24, 2006.

The Facility provided corrosion protection testing documentation indicating that testing had been conducted on UST-031 and its associated piping on April 27, 2007 [UST attachment #4 (note: UST-031 is mistakenly identified as Tank #41 in the attachment)]. The results of this testing indicated that the tank met the criteria for corrosion control, but the piping did not. Based on observations made during the inspection on July 15, 2009, the piping associated with UST-031 has been changed since the testing of the corrosion protection on April 27, 2009, and the piping now consists of copper piping that is routed through a PVC or fiberglass conduit to the emergency power generator, thus preventing contact with the ground. The Facility did not provide any documentation indicating when this change took place. Also, the Facility was not aware of any testing of the cathodic protection system for UST-031 and its associated piping conducted prior to 2007. The initial Notification for Underground Storage Tanks was submitted to the state of Maryland for UST-031 on October 24, 2006.

Financial Responsibility

NIH is a Federal government entity that is exempt from the requirements to demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum USTs.

Clean Air Act

The following observations are from a clean air inspection of NIH conducted by Mr. Michael Prescott, the inspector.

Current applicability and permit status

This section discusses the evaluation of compliance with the Clean Air Act (CAA) related to stationary air emissions sources and ozone depleting substances (ODSs). The National Institutes of Health (NIH) is subject to the CAA due to its emissions of air pollutants from a Cogeneration Utility System (CUS), several boilers, numerous emergency generators, and other sources. The Facility was issued a Maryland Title V Operating Permit by the Maryland Department of the Environmental (MDE) on October 1, 2008, that expires on April 30, 2013. The Facility also has numerous air conditioning and refrigeration (AC/R) units with ODSs[1] that are regulated under Title VI of the CAA and provisions in the Title V Operating Permit.

Previous compliance inspections and enforcement actions

NIH is inspected for CAA compliance by MDE about every two years. The compliance evaluation reports were obtained from NIH for the 6/1/06 and 6/24/08 Full Compliance Evaluations (FCEs) at NIH performed by MDE and the Facility was noted as being in compliance in these inspection reports.

The last enforcement action taken for CAA violations was by MDE and was a Notice of Violation (NOV) dated 5/16/05, for failure to monitor NOx in flue gases from

1 Ozone-depleting Substances

Boilers #1 – 4 every 168 hours of operation with an analyzer. NIH responded on 6/2/05, that they would acquire an approved analyzer and begin the required testing.

No prior CAA Title V compliance inspections for ODSs are known to have been conducted by EPA or MDE and no known enforcement actions related to ODSs have been taken.

Documents reviewed and related observations

Numerous documents were obtained in advance of the inspection as well as during the inspection. The listing of documents reviewed and related observations are presented below.

- MDE Title V Operating Permit No. 24-031-00324-2008 issued on October 1, 2008 and expires on April 30, 2013.
- Annual Compliance Certifications for Calendar Years (CYs) 2007 and 2008.
- Annual Emissions Certifications for CYs 2007 and 2008.
- Enforcement actions and correspondence between MDE and the facility related to various CAA issues.
- MDE FCE Reports for on-site inspections conducted in June 2006 and June 2008.
- Operating logs, visible emission observations logs, training certificates, and other records for individual air emissions units.
- Test Report for Air Emissions Testing, dated May 2009 (includes the NOx testing required biennially; excerpts are included in CAA attachment #1).
- 12 month rolling NOx emissions for the five boilers and CUS for 2008 and 2009.
- 12 month rolling average hours of operation for the emergency generators for 2008 and 2009.
- Fuel oil certifications and analysis.
- Material Safety Data Sheet (MSDS) for CUP parts washer.
- List of chiller units with greater than 50 lbs. of refrigerants in the CUP (see CAA attachment #2).
- Log of notes of maintenance conducted on chiller units in CUP.

According to Mr. Miller (NIH-DEP), the additional air emissions units such as emergency generators installed recently or planned for the future are not included in the Title V Permit. MDE was reported to have been notified of these new units. Mr. Miller also reported that in the last 19 years, NIH has gone from burning #6 fuel oil to burning mostly natural gas with low sulfur diesel oil as a backup fuel. This action has significantly reduced air emissions from the boilers.

Mr. Miller indicated that emissions from the approximately 5,000 labs were not included in the emissions inventories submitted to MDE as part of their Permit Applications. The omission of the labs was based on the fact they were listed as insignificant sources in the Title V Permit. The volatile organic compounds (VOCs) from these labs as well as from the regulated gasoline and E85 USTs were not included in the Emissions Certification Report calculations of total VOCs emitted.

In December 2008, biennial NOx testing required by the Permit was conducted over a three day period (December 11 – 13) and showed exceedances of the NOx lb/MMBTU Permit limit (see CAA attachment #1). Over the same period, oxygen level charts used as a surrogate for NOx monitoring under the approved alternate monitoring plan for Boiler #5 also showed exceedances of the oxygen limit. The oxygen levels on the three charts were barely visible because the marking pen was running out of ink and not replaced over the three days of noncompliance. According to Mr. Miller, NIH did not note this noncompliance in their 2008 Compliance Certification Report because the boiler operators did not notify him of the exceedances. This boiler was shutdown soon after because of physical damage to the boiler noted by the operators and repairs have not yet been completed.

Visible emissions observations logs were reviewed for the Central Heat Plant (CUP) and CUS. The emissions logs were not available for the emergency generators, but are not specifically required. The records appeared to be complete for the CUS and no incidences of visible emissions of concern were noted. However, over the past five years, visible emissions observations logs were only available for December 2004, January 2005, and January 2008 for the five boilers, although no incidences of visible emissions of concern were noted in these logs.

According to Mr. Miller, there is a combination of 25 to 30 (aboveground and underground) emergency generators for backup power at the NIH campus. Mr. Miller reported the emergency generators were normally run between 40 to 50 hours a year and none of the emergency generators were operated for greater than 260 hours per year. Mr. Miller provided a table of the 12 month rolling average hours of operation for the emergency generators for 2008 and 2009 and the numbers generally confirmed Mr. Miller's statements.

The training records required by the Title V Permit for the CUS were available at the time of the inspection and appeared to be adequate. The emergency generators, training records were provided after the inspection, which showed that five people had last received training in 2007.

According to Mr. Mayberry (CUP Technician Contractor for NIH), 12 large chiller units were serviced by him and others at the CUP. The list of chillers and their refrigerant type, charge in pounds, and other data are provided in CAA attachment #2. Mr. Mayberry could not provide adequate records/documentation regarding the addition of refrigerant to the chillers to replace lost refrigerant and for determining leak rates for the chillers. The inspector requested Mr. Mayberry and Mr. Miller determine how many pounds of R-22 refrigerant had been purchased in the last five years to replace refrigerant lost to leaks and other losses, but the inspector has not received this information as of 8/11/09.

Mr. Mayberry reported only he and Mr. Lease (CUP Contractor Supervisor) were certified to transfer refrigerant. Mr. Mayberry displayed his certification card, but Mr.

Lease was not present thus not allowing the inspector to view the certification card. NIH has permanent refrigerant recovery systems and tanks tied to the 12 large chillers in the CUP: one system and set of tanks for the six R-22 chillers and another for the six R-134a chillers. Mr. Mayberry could not produce copies of the notifications to EPA of the acquisition of the equipment. The inspector did not have time to inspect or check for training certifications of the smaller portable refrigerant recovery units operated by the Mechanical Group. In addition, NIH personnel could not determine if there were additional air conditioning and refrigeration units with greater than 50 pounds of regulated refrigerants on the NIH campus.

Facilities inspected and related observations

The inspector observed the CUP, CUS, and regulated gasoline/E85 UST's for compliance with applicable regulations and Permit conditions. The observations below are based on interviews with NIH personnel along with the inspector's physical observations. Photos referenced below are contained in the Photo Log (CAA photos No. 1-5).

Central Utility Plant

Five large boilers are located in the CUP building along with one trailer mounted temporary boiler located outside this building. According to Mr. Miller, the boilers all burn natural gas with diesel fuel as backup. Normally in the summer time, only one boiler operates at a time because the steam needs of NIH are met by the CUS. At the time of the inspection, the inspector did not see any visible emissions from the boilers, but these were simple observations that did not comply with Method 9.

Also located in the CUP building are 12 very large chillers, six of which contain R-22 with charges of between 17,500 and 26,500 pounds (see CAA attachment #2, for a listing of the chillers and key data). A picture of one of the chillers is shown in CAA Photo No. 3. The inspector also observed refrigerant recovery systems and tanks that served the six R-22 (see CAA Photo No. 4) and R-134a chillers.

In the CUP the inspector observed a parts washer (see CAA Photo No. 5) that Mr. Mayberry stated to contain a citric cleaner. After the inspection, Mr. Miller provided a MSDS for the cleaner, which was not a solvent that was regulated by MDE in the Permit.

Cogeneration Utility System

NIH owns the CUS that generates 23 megawatts of electrical power and uses the steam for heating purposes on the NIH campus. NIH uses the services of an onsite contractor, PEPCO Energy Services, to operate the CUS and maintain compliance with the Title V Permit requirements. According to Mr. Memarzadeh (director of technical resources for NIH), the CUS uses natural gas as the fuel for the gas turbine that generates electricity. Along with using natural gas the Facility uses #2 fuel oil as a backup for additional heating of the steam. The inspector did not identify any deficiencies at the

CUS. At the time of the inspection, the inspector did not see any visible emissions from the CUS, but these were simple observations that did not comply with Method 9.

Service Station

The inspector observed the vapor recovery pipe for the gasoline UST (see CAA Photo No. 1) at the service station. According to Mr. Minnick (NIH chief of fleet management), the gasoline and E85 USTs were equipped with Stage I vapor recovery equipment. There was no observation of Stage II vapor recovery equipment on any of the UST systems (see CAA Photo No. 2).

Emergency Generators

According to Mr. Miller, there are over 25 emergency generators for backup power at the NIH campus. The inspector did not have time to inspect any of the emergency generators, but typically they were not operating at the time of the inspection. Discussion of records review related to these generators is provided in the subsection above.

Clean Water Act

The following observations are from a clean water inspection of NIH conducted by Mr. Michael Prescott, the inspector.

Current applicability and permit status

This section discusses the evaluation of compliance with the National Pollutant Discharge Elimination System (NPDES) Permits and Storm Water regulatory requirements promulgated under authority of the CWA. NIH has a Maryland Individual NPDES Permit for direct discharges to a tributary of Rock Creek from the Central Utility Plant (CUP). NIH is also covered under a Maryland General NPDES Permit for Discharges from Small Municipal Separate Storm Sewer Systems (referred to as the MS4 Permit); however the inspector did not have time to evaluate compliance with this Permit. NIH also has a Permit from the local Publicly Owned Treatment Works (POTW), Washington Suburban Sanitary Commission (WSSC) for wastewater discharges from the Facility to the sanitary sewer. In addition, Brian Kim (NIH-DEP) reported there was one active construction project with disturbed land at NIH for which a request had been submitted for Storm Water Management and Sediment & Erosion Control Approval under the Maryland construction storm water regulations. Mr. Kim also reported that there was one upcoming project that would disturb about 4.5 acres.

Previous compliance inspections and enforcement actions

According to the EPA Online Tracking Information System (OTIS) database2, the last inspection for CWA was a sampling inspection on 4/29/09 for the NPDES Permit. The Facility was in noncompliance with this NPDES Permit for four of the last 12 quarters, but no enforcement actions were noted in the OTIS record for the past five years. According to Mr. Miller (NIH-DEP), WSSC inspects NIH annually and samples the effluent quarterly. The last sampling event occurred on 6/3-4/09 and pH exceedances were identified at the monitoring point and a Notice of Violation (NOV) was issued by WSSC on 6/19/09 (see CWA attachment #1).

Documents reviewed and related observations

The following documents related to the CWA regulatory requirements were reviewed for the NIH facility:

- Individual NPDES Permit No. MD0025496 effective 2/1/09 and expires 1/31/12.
- Correspondence and documentation related to pH exceedances of the Individual NPDES Permit for 2007 and 2008 (see CWA attachment #2).
- Industrial Storm Water Pollution Prevention Plan (SWPPP) dated July 2000.
- Reports of biomonitoring and copper monitoring required by the Individual NPDES Permit.
- WSSC Discharge Authorization Permit No. 0811 effective 6/6/08 and expires 6/5/12.
- Last four quarterly monitoring reports prepared by NIH for the WSSC Permit.
- NOV, dated 6/19/09, issued by WSSC for pH violations identified during monitoring in June 2009.
- Storm Water Management and Sediment & Erosion Control Approval from the Maryland Department of the Environment (MDE) for the Bldg. 12 Infrastructure Upgrade (see CWA attachment #3).
- Construction plans for the Bldg. 12 Infrastructure Upgrade construction project.
- Corrective Site Work Report for the Bldg. 12 Infrastructure Upgrade Project.

Review of the above-mentioned documents generated the following observations related to CWA compliance.

NIH discharges cooling tower blowdown under the Individual NPDES Permit number MD0025496 which specifies effluent limits and monitoring for pH, residual chlorine, temperature, and dissolved oxygen. NIH exceeded the upper pH limits for two quarters in 2007 and two quarters in 2008. Related correspondence on these exceedances (see CWA attachment #2) indicated NIH did not take corrective actions, but instead determined that the high buffering capacity of the NIH stream would not adversely

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2 A public version of OTIS can be found at http://www.epa-echo.gov/echo/.

impact downstream waters. The inspector also reviewed biomonitoring and copper monitoring conducted by NIH, as required by the NPDES Permit, and did not identify any related concerns.

The Individual NPDES Permit required development and implementation of a SWPPP. NIH prepared an Industrial SWPPP dated July 2000 and has not updated the Plan to reflect changes at NIH including new emergency generators with diesel tanks, new buildings, changes at the Service Station, etc. The inspector reviewed the SWPPP and determined it did not adequately address most of the NPDES Permit requirements for a SWPPP including the following:

- The Plan did not inventory all sources of exposure of storm water to pollutants and did not identify Best Management Practices (BMPs)/storm water management controls to address these exposures. An example of an area that should have been addressed was the Service Station where the spill berm had been constructed, but the procedures to close the valve to prevent spills had not been implemented (see the discussion on the Service Station in the next subsection for more details).
- The SWPP training specified in the Plan was not implemented. According to Mr. Kim, SWPP training was only recently conducted in May 2009 and only for three people (there are almost 20,000 people that work at NIH, according to Mr. Floyd).
- The annual industrial storm water inspections by qualified personnel required by the Permit have not been conducted since 2000.
- The Plan does not address the additional Permit requirements for Section 313 water priority chemicals.

NIH is regulated by WSSC for wastewater discharges to the sanitary sewer system and is covered under a Discharge Authorization Permit. According to Mr. Kim, WSSC conducts quarterly monitoring of NIH's discharges and conducts annual inspections lasting four to eight days. In addition, Mr. Kim reported NIH conducts quarterly monitoring of their discharge as required by their Permit. Recent monitoring conducted by WSSC on 6/3-4/09 showed low pH violations of the Permit limits. WSSC issued a NOV on 6/19/09, asking for an explanation of the violations and immediate correction of the violations (see CWA attachment #1). Mr. Kim explained that they had received an extension of the deadline for a response to 7/20/09 and were working on the response.

Mr. Kim reported there was only one active construction project on the Facility with disturbed land that was regulated under the Maryland Construction Storm Water regulatory program. Mr. Prescott inspected this construction site with inspectors from MDE and related observations are discussed below.

Facilities inspected and related observations

Due to the limited time available, the inspector was only able to inspect a few indoor and outdoor areas for compliance with CWA requirements. The inspector visited the areas listed below and relevant observations that were noted are presented under each heading. All photographs referred to in these subsections are contained in the Photo Log

(CWA photos No. 1-10) and the photographs are numbered in the chronological order in which they were taken. Rich Wolters and Oladapo John of MDE were present on July 15 for inspections of these areas except for the Service Station which the inspector visited on July 14.

Mr. Miller reported all labs at NIH were regularly inspected by NIH hazardous waste management personnel who pick up hazardous wastes and ensure the lab personnel do not dump wastes to the sanitary sewer. Mr. Miller believed there was no reason for hazardous wastes to be dumped to the drain since it was easier for lab personnel to call for a pickup of wastes.

CUP and NPDES Outfall

The air conditioning chillers at the CUP discharge cooling tower blowdown to the Individual NPDES outfall. The inspector observed the blow down discharge lines from the CUP, along with visiting the outfall discharge and monitoring points (see CWA Photos No. 1 and 2). According to Mr. Lease (CUP Contractor Supervisor), water treatment chemicals were added to the chiller water and at least one chemical had a high pH. Mr. Lease reported they were looking into a new formulation of the high pH chemical that had a lower pH. The inspector did not observe any concerns at the discharge and monitoring points.

Building 14A Cage Washer

Mark Miller (NIH-DEP) reported there were several animal cage washers on the NIH campus, but the inspector only had time to visit one of them. The inspector chose to look at the rack washer at Bldg. 14A because it used phosphoric acid to remove scale from the cages and could be a possible source of the low pH violations identified by WSSC.

Kelly Prevost (animal facility supervisor) showed the inspector the cage washing area. Within the cage washing area, the Facility stored the chemicals used in the process (see CWA Photo No. 9), along with a tank used to collect the wastewater prior to discharge (see CWA Photo No. 10). Mr. Prevost reported pH and temperature controllers adjusted the pH and temperature of the wastewater prior to discharge to the sanitary sewer and that the controllers were checked by a contractor every three months. The inspector then asked Mr. Miller to find out how often the manufacturer of the pH controller specified that it be calibrated, but the inspector has not received this information as of 7/31/09. The inspector did not observe any concerns with this cage washer and pH and temperature adjustment tank and system.

Service Station

The inspector observed a service station with three UST's. All three UST systems had a secondary containment berm around the fuel dispensers and fill points. The drainage from the bermed area flowed to a storm line inlet (see CWA Photo No. 3) that was connected to a storm sewer (see CWA Photo No. 4). The inspector observed a valve on the storm line inlet that was open. Mr. Minnick tried to close the valve, but it was stuck and obviously had not been closed for some time. According to a sign present at the site and procedures required by NIH, the valve is supposed to be closed during filling of the USTs. Mr. Minnick (NIH chief of fleet management) reported vehicle maintenance was no longer conducted at the Service Station or on the NIH campus.

Bldg. 12 Infrastructure Upgrade Construction Project

This report discusses the evaluation of compliance for the Building 12 Infrastructure Upgrade construction site with the Maryland construction storm water regulations. The inspection was conducted on July 15, 2009, during the multi-media inspection of NIH and this report was prepared by Michael Prescott, EPA Contractor. Two inspectors from the Maryland Department of the Environment (MDE), Rich Wolters and Oladapo John, accompanied Mr. Prescott on the inspection of the construction site.

Brian Kim of NIH reported there was one active construction project with disturbed land at NIH for which a request had been submitted for Storm Water Management and Sediment & Erosion Control Approval under the Maryland construction storm water regulations. Mr. Kim also reported that there was one upcoming project that would disturb about 4.5 acres. Mr. Kim escorted the inspectors during the inspection of the construction site.

Mr. Prescott reviewed the following documents related to the construction site:

- Storm Water Management and Sediment & Erosion Control Approval from the Maryland Department of the Environment (MDE) for the Bldg. 12 Infrastructure Upgrade (see CWA attachment #3).
- Construction plans for the Bldg. 12 Infrastructure Upgrade construction project.
- Corrective Site Work Report for the Bldg. 12 Infrastructure Upgrade Project (see CWA attachment #4).

According to Mr. Kim, this construction project disturbed about ¼ acre and started around mid-May 2009. The construction project was subject to MDE storm water regulations applicable to construction projects disturbing between 5,000 square feet and one acre. The inspectors visited the construction site for this project on July 15 and it was active and most of the land on the site had been disturbed. The construction contractor was Tishman Construction Co. and the point of contact was John Stone, Superintendent.

Mr. Wolters noted that the gravel area at the construction entrance did not extend far enough into the site to properly allow mud and dirt to come off vehicles leaving the site. Silt fences were in place along the sloping sides of the site and appeared to be in good shape at the time of the inspection (see CWA Photo No. 5). The inspectors observed a makeshift dewatering unit (see CWA Photo No. 7) that was not built according to the construction specifications and industry standards. In addition, silt had been allowed to accumulate in the unit above the 50% threshold and was approaching the outlet point (see CWA Photo No. 8). Evidence of a grayish discharge from the dewatering unit was observed on the hay around the drainage inlet and on the grate (see CWA Photos No. 6 and 8). Mr. Stone reported they had completed dewatering activities and no longer needed this unit.

According to the construction plans, the storm drain inlet pictured in CWA Photo No. 6 was supposed to have been covered with a geotextile barrier and gravel which was not done. Instead there was only some hay around the inlet, which had deteriorated, and a small liner around the inlet. This deficiency made for further concerns for the discharges from the dewatering unit as well as drainage from the site.

At the end of the inspection of this construction site, the inspectors reported their concerns to Mr. Stone and Mr. Kim. The next day corrective actions were taken at the site, as evidenced by the pictures and report prepared by NIH and included in (CWA attachment #4).

Toxic Substance Control Act

The following observations are from a TSCA inspection of NIH conducted by Mr. José Jiménez.

Section 1018 (disclosure rule) of TSCA's Title IV is intended to ensure family health. It requires the disclosure of known information on lead-based paint and/or lead-based paint hazards before the sale or lease of housing built before 1978. Sellers and lessors must provide purchasers and lessees with a lead hazard information pamphlet such as "Protect Your Family From Lead in Your Home," that provides information on identifying and controlling lead-based paint hazards. The sale contracts or rental leases must include a Lead Warning Statement, signed by the purchaser or lessor.

On July 16, 2009, EPA inspector, José Jiménez, met with William K. Floyd and Kelvin Grant to review the lead-based paint disclosure environmental requirements. Mr. Floyd is the Director of the Division of Environmental Protection, and Mr. Grant is the Facility Manager for Quarters, the residential units at NIH. Mr. Grant has been in this position for four months.

Records Review

According to Mr. Grant, at the time of the inspection the Facility has 16 residential units, two single and seven duplex units for NIH senior staff. Three of these residential units were in use at the time of inspection. These residential units were built in the 1940's. The residential units are rented by using a lease agreement signed between a Facility representative and the lessees. At the time of the inspection, signed lease agreements and disclosures done by the Facility were not available. The EPA inspector obtained a blank lease agreement. This form does not contain language concerning the lead-based paint disclosure (see TSCA attachment #1). At the time of the inspection, there was no evidence that the EPA-approved information pamphlet "Protect Your Family From Lead In Your Home" was distributed to the residences. The Facility representatives were referred to http://www.epa.gov/lead/pubs/brochure.htm for access to the pamphlet.

According to a letter from Mr. Floyd, see General attachment #1, Daniel G. Wheeland, Director of the Office of Research Facilities, prepared a memorandum, dated July 27, 2009, to notify all residential units' residences about the lead-based paint requirements under the disclosure rule. With the memorandum, the Facility sent the disclosure form of known information on lead-based paint and/or lead-based paint hazards.

Spill Prevention Control and Countermeasure Plan

The following observations are from a SPCC inspection of NIH conducted by Mr. Garth Connor.

The nearest water body is the NIH Creek, also called Carroll Creek, which runs in a northerly direction through the property from South Drive to Rockville Pike. This small stream eventually drains into Rock Creek, which then discharges into the Potomac River. The Facility had an SPCC plan that was dated June 6, 2006. The Facility's plan was professionally certified by James Carscadden, P.E., and received management approval from William K. Floyd. The plan was somewhat outdated, and several of the tanks listed in the plan were no longer in use or had been completely removed from the Facility. The SPCC plan should be amended and updated by Facility staff.

Records Review

The Facility has two 567,000-gallon underground storage tanks that were both installed in 1957, containing heating oil. In talking with staff from the Facility, it was determined that the Facility did not have a Facility Response Plan. This lack of an FRP plan was surprising in that the Facility had over 1,200,000 gallons of oil storage capacity and was located in a sensitive environment. Facility staff had misinterpreted the FRP regulations at some point in time and decided that they didn't need to produce or implement an FRP plan.

Inspection Observations

In the final segment of this inspection, NIH environmental staff accompanied the EPA inspector to look at some of the Facility's oil storage tanks. A 10,000-gallon diesel tank outside of Building 35 was examined in this field portion of the inspection. The inspectors also went to the Facility's service station where three 10,000-gallon underground gasoline tanks are located. In this portion of the Facility, a shut-off valve is located near an adjacent storm drain to prevent oil from reaching the drain during a tank fill-up. A sign on the wall in this area describes how the valve should always be closed prior to fill-up in case of an oil spill. However, the valve had broken and was stuck in the open position. It could not be closed by the Facility personnel working in that area.

Emergency Planning and Community Right to Know Act

The following observations are from an EPCRA inspection of NIH conducted by Mr. José Jiménez.

On July 13 and 14, 2009, EPA inspector, José Jiménez, met with William K. Floyd and Chuck Carroll (NIH-DEP) to review the Facility's compliance with the EPCRA 313 environmental requirements.

The Title III of the 1986 Superfund Amendments and Reauthorization Act (SARA) (also known as the Emergency Planning and Planning and Community Right-to-Know Act [EPCRA]) requires all manufacturing facilities to report annually to the public, information about stored toxic substances, as well as about release of such substances into the environment. The report, known as the Toxic Release Inventory (TRI) Executive Order (EO) 12856, made the TRI reporting requirement applicable to all Federal facilities. Consequently, Federal facilities were required to submit their first set of TRI data to EPA on July 1, 1995.

Section 313 of EPCRA requires those facilities subject to the EPCRA 313 requirements to report to the federal and state governments the annual quantity of toxic chemicals (listed in 40 C.F.R. Section 372.65) entering each environmental medium, either through normal operations or as the result of an accident, quantities transferred off-site in waste, as well as other information. Facilities subject to this requirement must submit to EPA and state officials a toxic chemical release form (Form R) for each toxic chemical manufactured, processed, or otherwise used in quantities exceeding minimum threshold values during the preceding calendar year. Releases that must be reported include those to air, water, and land (including land disposal and underground injection). In addition, discharges to a POTW and transfers to off-site locations for treatment, disposal, energy recovery, and recycling must also be reported. Facilities must also report on the quantities of the chemicals treated, recycled, or combusted for energy recovery on-site. Form R reports must be submitted to both the EPA and the state on or before July 1. Copies of Form R reports and related documentation must be kept at the Facility for three years after the report is submitted.

Background

The Facility has submitted EPCRA section 313 form R's since 2005. According to the EPA enforcement database Online Tracking Information System (OTIS) for the years of 2006 and 2007, the Facility had released and transferred a total of 10,205 and 2,559 pounds of Mercury and Lead, respectively. Both of these chemicals are EPCRA 313.

Inspection Observations

According to the Facility representatives, threshold determinations are performed based on disposal records. This is due to the lack of a centralized system to manage the EPCRA Section 313 chemicals. According to Facility representatives, NIH has 20 different institutes and it is difficult for the environmental group to coordinate with those who acquire 313 chemicals (see EPCRA attachment #1).

Under EPCRA Section 313, TRI threshold quantities determinations are based on the amount of the EPCRA section 313 chemical that is manufactured, processed or otherwise used. Separate thresholds apply to EPCRA 313 chemicals, for example:

> A facility must submit a report for any EPCRA section 313 chemical, which is not listed as a PBT chemical that is manufactured or processed at the facility in excess of the following threshold:
>
> - 25,000 pounds per EPCRA section 313 chemical or category over the calendar year.
>
> A facility must submit a report for any EPCRA section 313 chemical, which is not listed as a PBT chemical that is otherwise used at the facility in excess of the following threshold:
>
> - 10,000 pounds per EPCRA section 313 chemical or category over the calendar year.
>
> A facility must submit a report for any EPCRA section 313 chemical, which is listed as a PBT chemical that is manufactured, processed or otherwise used at the facility above the designated threshold for that chemical.
>
> - For Polychlorinated biphenyl (PCBs) - 10 pounds
> - Lead - 100 pounds.
> - Mercury - 10 pounds.

Mercury and Lead were generated as part of building decommissioning conducted at the Facility. The necessary information to complete the Form R is collected from several sources like Clean Venture (contractor) who generates the "NIH TRI Reportable Chemicals Received as Waste" (see EPCRA attachments #2 and #3) along with a database system (EnviroWare) that tracks hazardous waste generated at the

Facility. The database is managed by David Mohammadi, along with other members of the environmental staff.

Mr. Carroll reviews the information and determines what exemptions are applicable to the Facility, like article and laboratory. According to Mr. Carroll, 313 chemicals generated from the Hospital were included in the threshold determination; but he concluded that they were subject to the Lab exemption.

For the purpose of this inspection, Mr. Jiménez limited the investigation to reporting years 2006 and 2007, and the 313 chemicals Lead and Mercury. See EPCRA attachments #4 and #8, for a summary worksheet generated by the Facility for reporting years 2006 and 2007.

Lead

Most of the lead is generated from sink traps, lead cup sinks, and lead debris as part of building decommissioning. According to Mr. Carroll, the releases from the pipes are based on a TCLP (Toxicity Characteristic Leaching Procedure) sample taken five years ago, from liquid trapped in the pipe over a year. Form R's, were reviewed during the inspection (see EPCRA attachment # 5 and # 9). Release calculations were not available at the time of the inspection.

Mercury

Most of the Mercury is generated from sink traps and debris as part of building decommissioning. The Form R's were reviewed during the inspection (see EPCRA attachment #6 and # 10). No release calculations were available at the time of the inspection. The mercury releases from the pipes are based on the same sample taken to report lead releases.

Environmental Management System

The following observations are from an EMS inspection of NIH conducted by Mr. José Jiménez.

Federal agencies are required by Executive Order 13148 to have an environmental management Systems (EMSs) at appropriate facilities by December 31, 2005. An EMS can help an organization not just reduce its impact on the environment, but also to improve its efficiency of operations. An EMS is a set of processes and practices used to achieve these ends.

As part of the Executive Order, the Facility was designated as an appropriate facility to implement an EMS. The Facility is located in Bethesda, Maryland. As part of the EMS implementation process, the Facility started the implementation within the environmental group, and now includes the whole Facility. Also, the name was changed to NEMS (NIH's Environmental Management System), to create a distinction from the

Emergency Management System. For a copy of the NEMS Manual see EMS attachment #1).

Records Review

On July 14, 2009, EPA inspector, José Jiménez, met with Terry Leland and William K. Floyd to inquire about their EMS. Mrs. Leland is the NEMS Coordinator and she has been in that capacity since 2002.

The Facility has completed at least one EMS cycle. The last internal audit and management review were conducted in December 2008. During the management review, management was briefed about the audit results and compliance issues observed by the staff and states. Eleven significant aspects were identified by the Facility and each one of them has an Environmental Management Plan (EMP). The EMPs were created and implemented by the NEMS implementation teams that are part of the NEMS implementation structure. The teams are: Advisory Groups, Functional Working Groups, Green Teams, and Montgomery County Sites. All these teams assist in the implementation of the objectives. EMS attachment #2 provides information on NEMS teams. For additional information on the Facility EMS, visit http://nems.nih.gov/index.cfm.

The Facility is working with local groups, 27 in total, on a project known as "Bethesda Go Green" to incorporate EMS concept at a regional level.

The NEMS has a very active outreach program; their posters have gained the admiration of Federal facilities in the area. For more information on the outreach program visit http://nems.nih.gov/outreach/index.cfm.

Based on the information obtained from the Facility representatives, the NEMS is active and has the support of those in the Environmental office. Clear goals have been established and the Facility is committed to achieving the goals.